We claim:

1. A process for the preparation of gabapentin which comprises the steps of:

(a) reacting a carboxaldehyde selected from the group consisting of cyclohexanecarboxaldehyde and cyclohexenecarboxaldehyde with an amine selected from the group consisting of secondary alkyl and arylalkyl amines;

(b) reacting the resultant enamine with an alkylating agent having the formula Y-CH_2-X, wherein Y is a leaving group selected from halogen, C_1-C_{10} alkane sulfonate, and C_5-C_{10} arene sulfonate and X is selected from the group consisting of –CN, -CO_2M, -CO_2R_3 and –$CONR_4R_5$, with R_3 to R_5 being independently selected from the group consisting of hydrogen, cyanoethyl, alkyl cycloalkyl, aryl unsubstituted or substituted with electron withdrawing or electron donating groups; arylalkyl unsubstituted or substituted with electron withdrawing or electron donating groups, and M is selected from the group consisting of lithium, sodium, potassium, calcium, magnesium, trialkylammonium and tetralkylammonium;

(c) converting the resultant iminium salt to gabapentin.

2. A method as in Claim1 wherein R^1 and R^2 are benzyl groups and the conversion of Step (c) to produce gabapentin is accomplished by direct reductive amination .

3. A method as in Claim 1 wherein the conversion of Step (c) is accomplished by hydrolysis to an aldehyde followed by reduction to gabapentin.

4. A method as in Claim 1 in which Step (c) comprises hydrolysis of the iminium salt to an aldehyde wherein X is a benzyl ester, acid or a salt and the conversion to gabapentin is accomplished by direct reductive amination.

5. A method as in Claim 1 in which Step (c) comprises hydrolysis of the iminium salt to an aldehyde wherein X is other than a benzyl ester, acid or a salt, followed by amination to form the lactam and hydrogenolysis to produce gabapentin.

6. A process for the preparation of gabapentin which comprises:

(a) reacting diisobutyl amine and cyclohexanecarboxaldehyde to produce cyclohexylidenemethyl-diisobutyl amine;

(b) alkylating said cyclohexylidenemethyl-diisobutyl amine by reaction with ethylbromoacetate to produce (1-ethoxycarbonylmethyl-cyclohexylmethylene)-diisobutyl ammonium bromide;

(c) hydrolyzing said (1-ethoxycarbonylmethyl-cyclohexylmethylene)-diisobutyl ammonium bromide to produce ethyl (1-formylcyclohexyl)acetate;

(d) subjecting said ethyl (1-formylcyclohexyl)acetate to direct reductive amination to produce gabapentin.